



Office of Satellite Data Processing and Distribution

Suitland, Maryland

Information Processing Division (IPD)

- **Product Systems Branch**
- **Computer Operations Branch**
- **Satellite Active Archive (SAA)**

Direct Services Division (DSD)

- **Direct Satellite Readout**
- **Search and Rescue Satellite Aided Tracking**
- **GOES Data Collection**
- **ARGOS Data Collection**

Satellite Services Division (SSD)

- **Interactive Processing Branch**
- **Satellite Analysis Branch**



Satellite Services Division

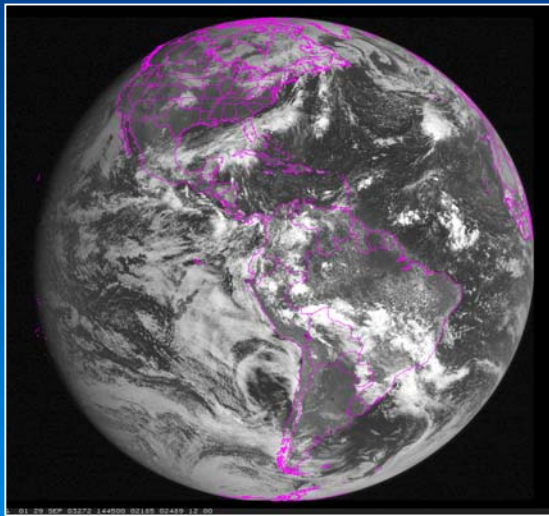
Serves as NOAA/NESDIS focal point for providing high quality, real time global satellite-derived products, interpretive analyses, and other information.

These services, provided by professional meteorologists, support domestic and international meteorological warnings and forecasts, numerical weather models, climate analyses, and other initiatives within the Federal government.



GOES Satellite Data

GOES Data used to monitor for disasters...

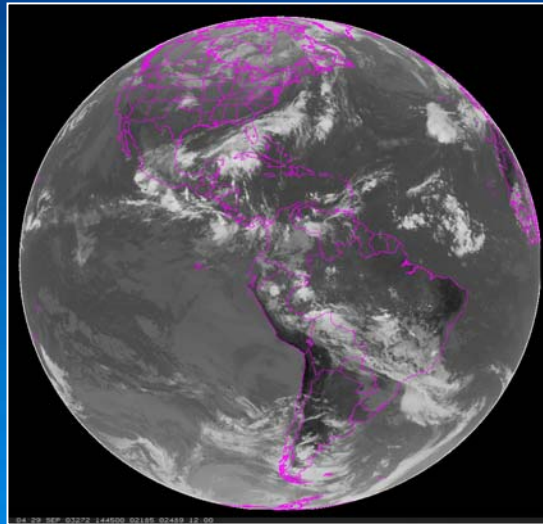


Channel 1 (Visible) $0.65\ \mu\text{m}$

1 km resolution

Albedo Brightness

**Developing cumulus,
convergence lines,
overshooting tops, snow
cover.**

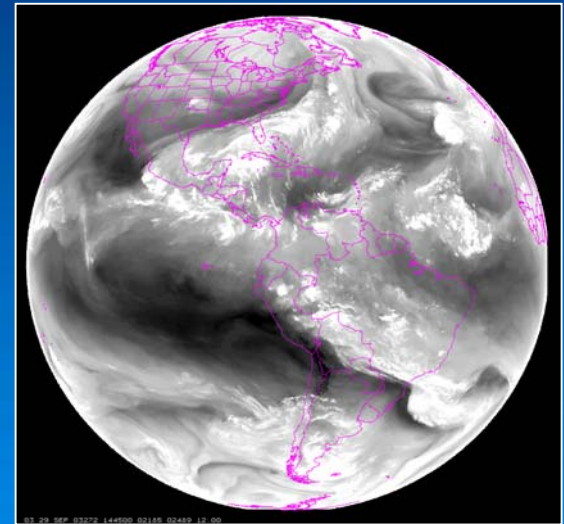


Channel 4 (Infrared) $10.7\ \mu\text{m}$

4 km resolution

Cloud Top Temperature

**Cloud top height/temp, night
time clouds, high cirrus,
cloud movement/growth**



**Channel 3 (Water Vapor)
 $6.5\ \mu\text{m}$**

4 km GOES-12/8 km GOES 10/9

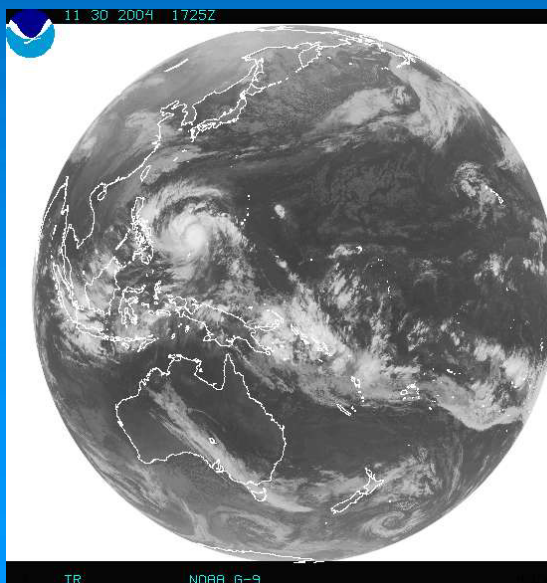
Mid troposphere temp.

**Jet stream/vorticity,
temp/moisture in mid
troposphere/shortwave
troughs**

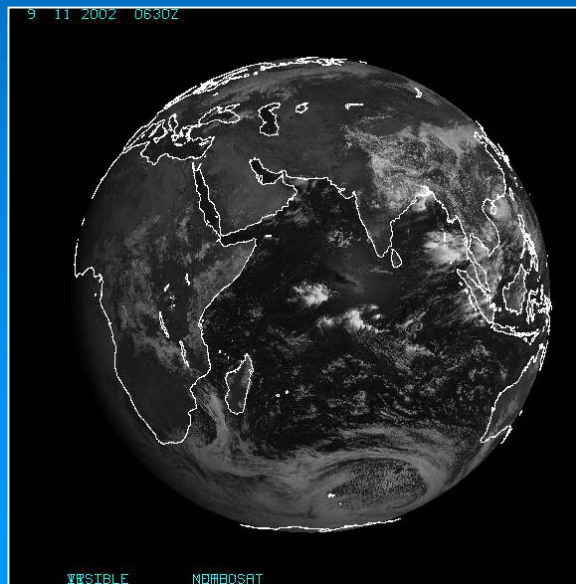


Geostationary Satellite Data Used by SSD

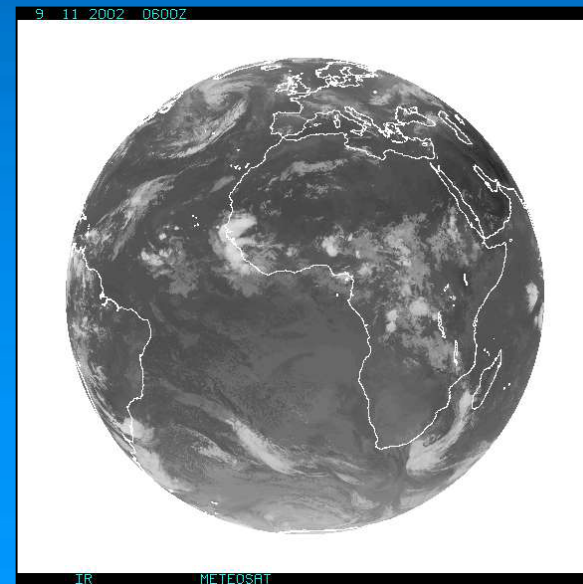
- GOES-12 at 75 degrees West
- GOES-10 at 135 degrees West
- Meteosat-7 at 0 degrees
- GOES-9 at 155 degrees East
 - GOES-9 replaced aging GMS-5 in 2003
- Meteosat-5 at 63 degrees East



GOES-9



METEOSAT-5



METEOSAT-7



Man computer Interactive Data Analysis System (McIDAS)

- **Developed by the Space Science Engineering Center at the University of Wisconsin**
- **Hardware and Software**
 - **Ingestors read GVAR from Antenna downlink**
 - **Servers to remap and store GVAR and other data (polar, models, radar, weather text, weather binary, etc)**
 - **Clients to pull and display data using ADDE**





GOES Data Products

**Tropical
Cyclone
Classifications**



**Fire Detection
And Analysis**



**Snow/Ice
Analysis**



Interpretive Products

**Volcano Hazards
Alerts**



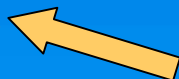
**Quantitative
Precipitation
Estimates**



**Special
Event Imagery**



**GOES Imager/Sounder
Derived Product
Imagery**



**Automated
ASOS SCP**



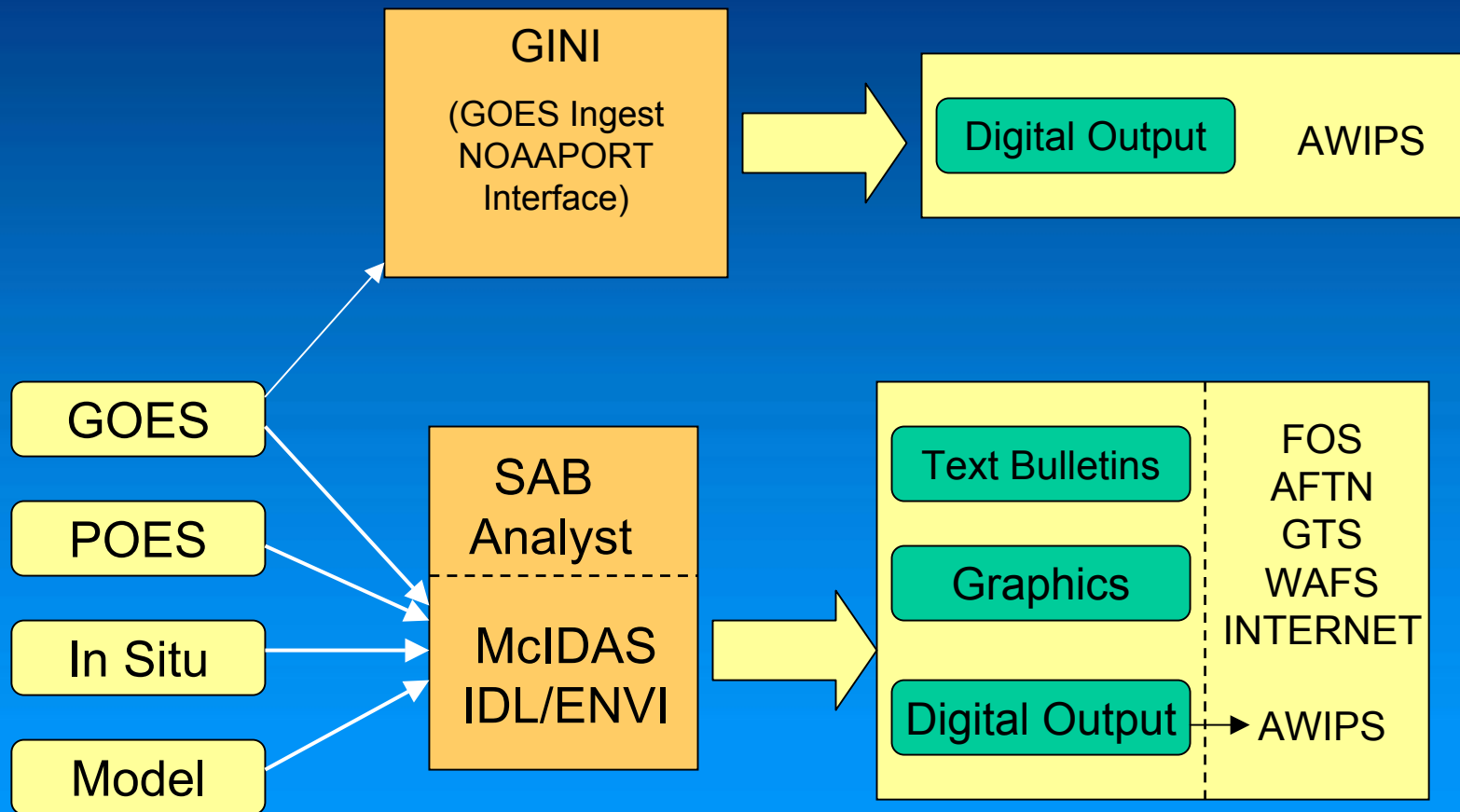
Automated Products

**Remapped
GOES IR, VIS,
and Water
Vapor Sectors**





GOES Data Dissemination

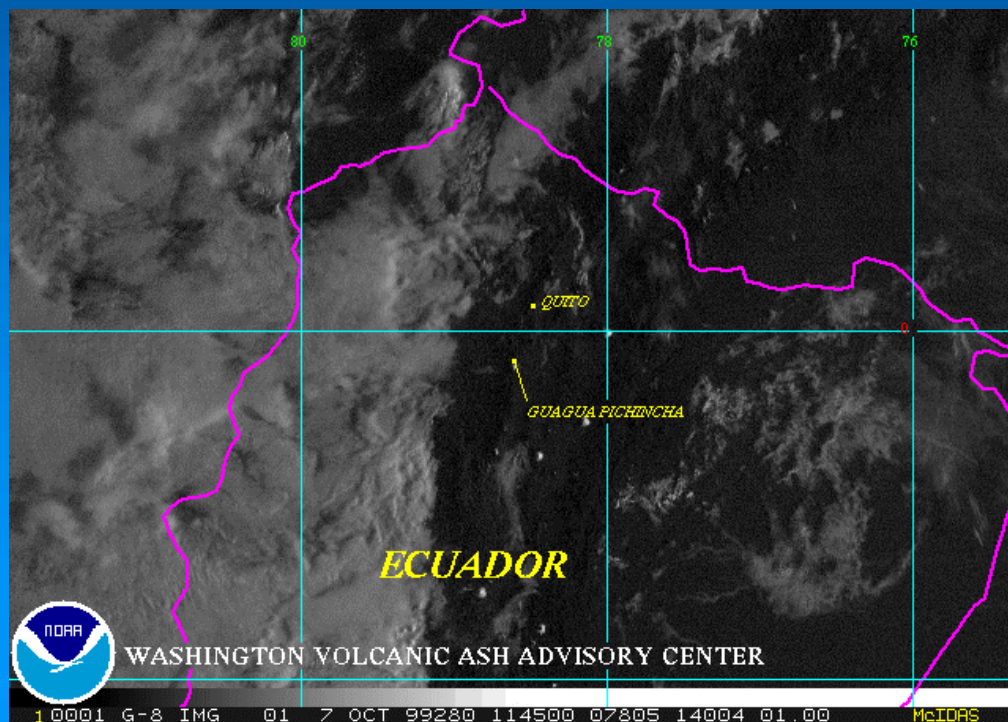




SSD Products and Services

Volcanic Ash Analysis

Washington Volcanic Ash Advisory Center (VAAC)



- Uses McIDAS to display and draw outline of ash visible in multichannel GOES imagery.
- Utilizes IMGOPER to perform multispectral analysis of different Infrared channels to isolate ash emissivity, ability to differentiate ash from water cloud.

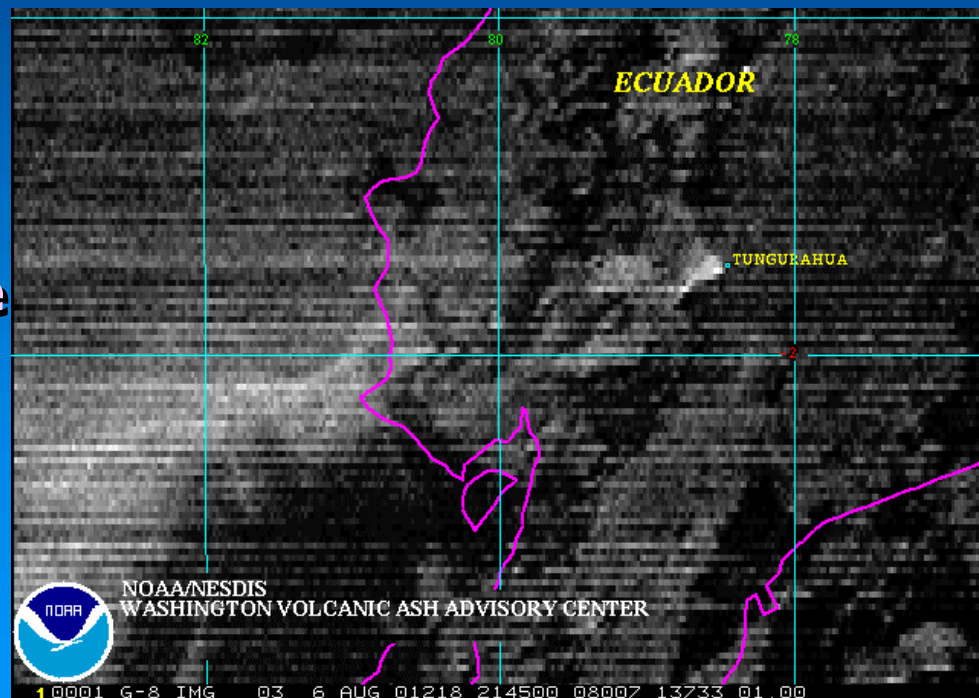


SSD Products and Services

Volcanic Ash Analysis

Ash Analysis using Principle Component Imagery (PCI)

- **McIDAS analysis of three infrared channels (3.9, 10.7, and 12 μm) output with weights applied to each channel based on the eigenvector/eigenvalue analysis of the original imagery.**
- **Very useful for isolating ash radiance when environment does not remain constant**

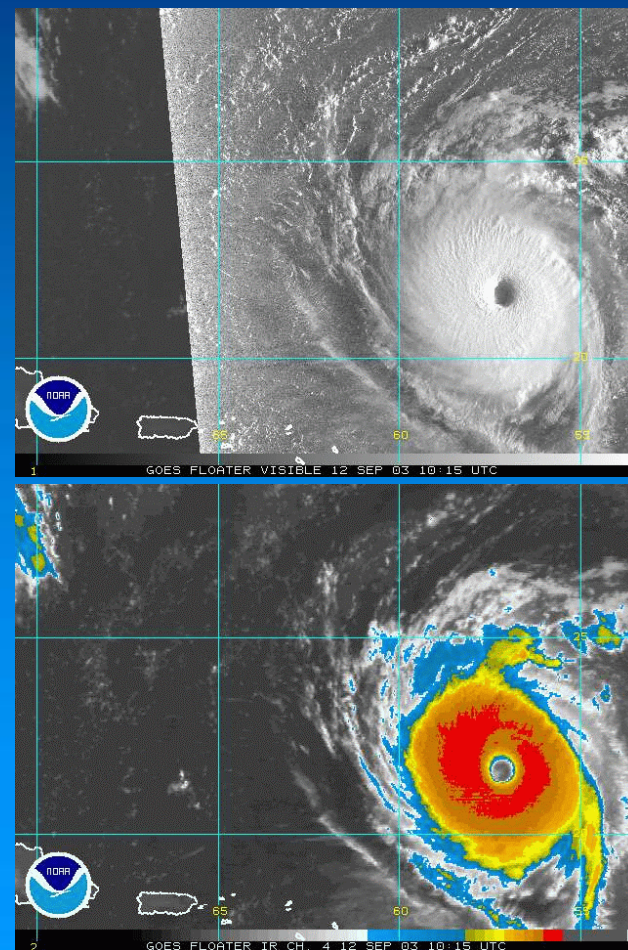




SSD Products and Services

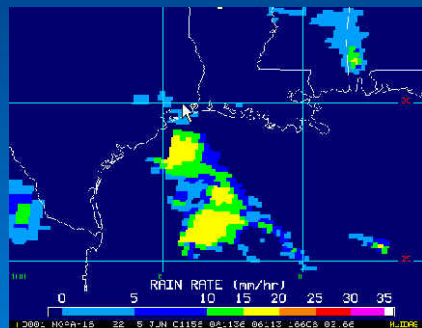
Tropical Storm Positioning and Intensity

- Global analysis of Geostationary and Polar Orbiting data
- Satellite fixes on storm centers every six hours
- Western Hemisphere – data sent to NHC, CPHC
- Eastern Hemisphere – data sent to NOAA Family of Services as text bulletin

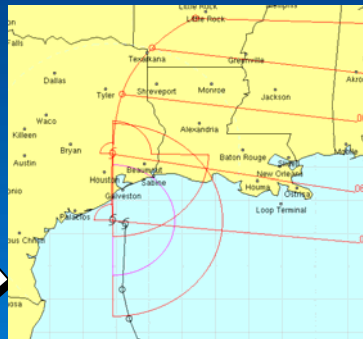


SSD Products and Services

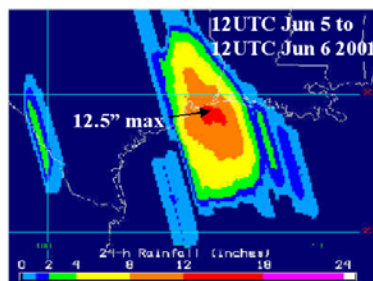
Tropical Rainfall Potential (TRaP)



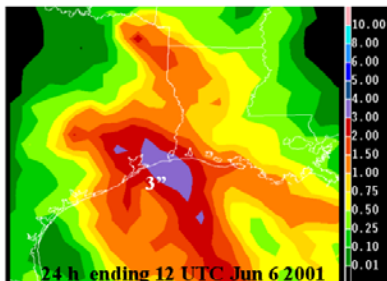
+



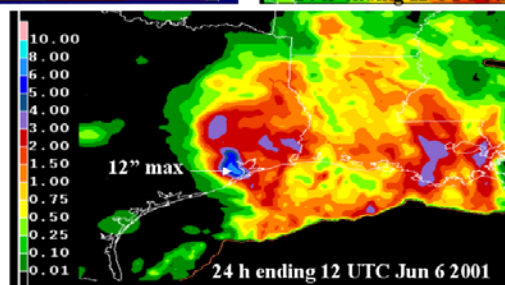
TRaP Calculations



ETA Model Forecast



Stage III
multi-sensor
observations



*Tropical
Storm
Allison*

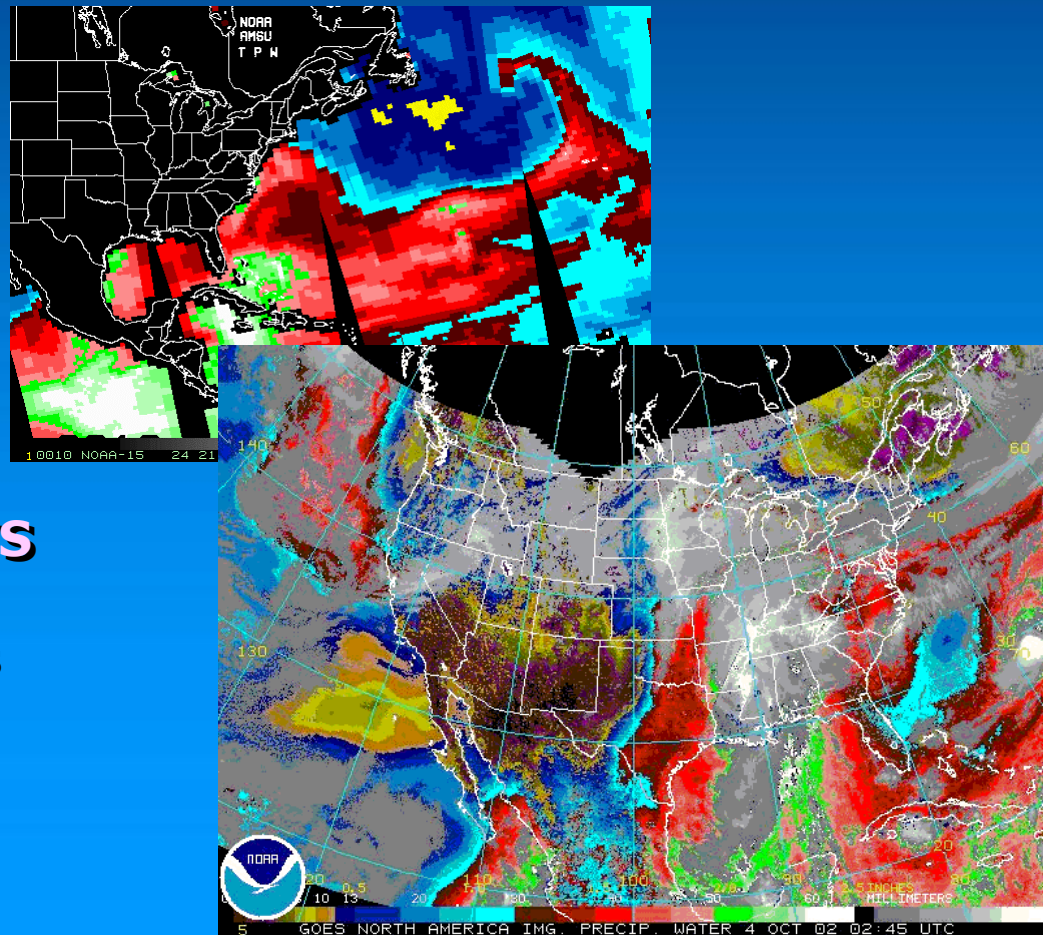
- Calculates an objective rainfall potential map from the latest Rain Rates
- Extrapolates using McIDAS to 24 hours by every 6 hours using the latest NHC, CPHC, or JTWC forecast track
- Now fully automated – will run for every forecast and every latest rain rate produced
- Can be used with SSM/I, AMSU, TRMM, or GOES Multispectral Rain Rates



SSD Products and Services

Heavy Rain/Snow Analysis and NOWCasting

- **Looping McIDAS imagery used to identify movements and trends in specific meteorological parameters such as Precipitable Water, Rain Rate, Cloud Liquid Water, Jet Streams, waves, Vorticity centers, etc.**
- **Analysis of data given to NWS HPC as part of Precip forecasts and to NWS offices in Satellite Precip. Estimate Messages**

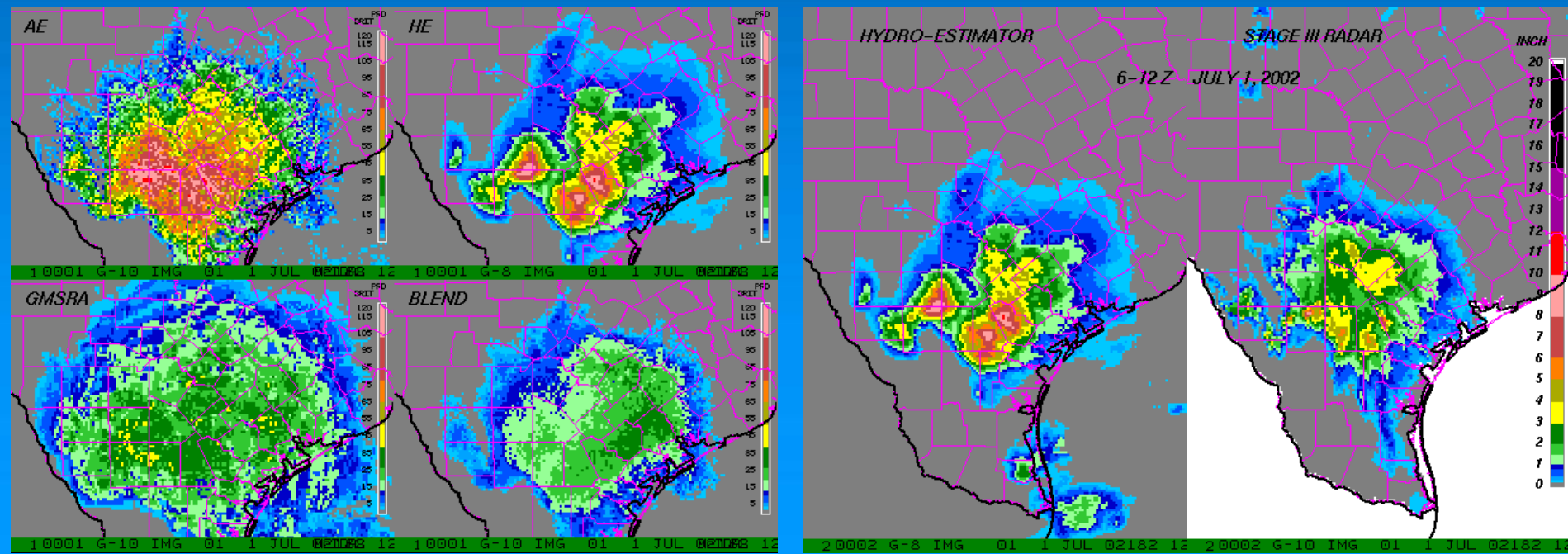




SSD Products and Services

The AutoEstimator and Hydro-Estimator

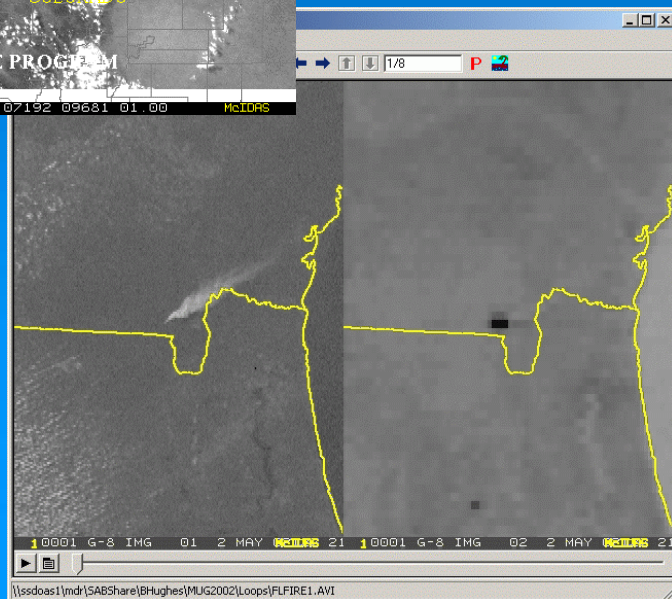
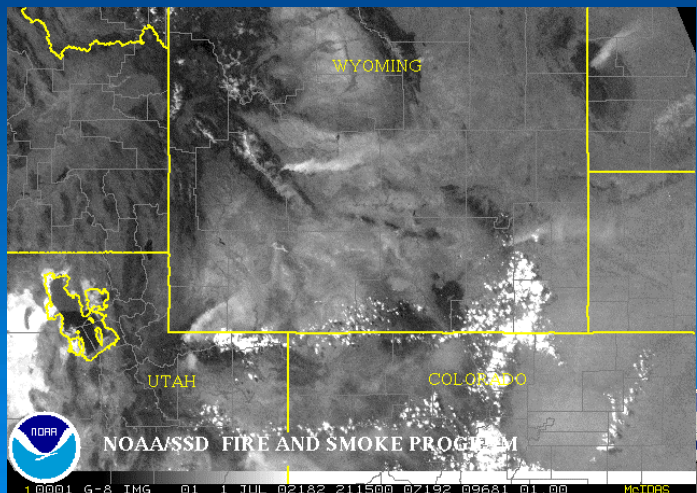
McIDAS based algorithm that blends GOES, POES, Model, and Radar data into one product that will analyze precipitation amounts every 15 minutes and produce quantitative precipitation totals.





SSD Products and Services

U.S. Wildfire and Smoke Analysis



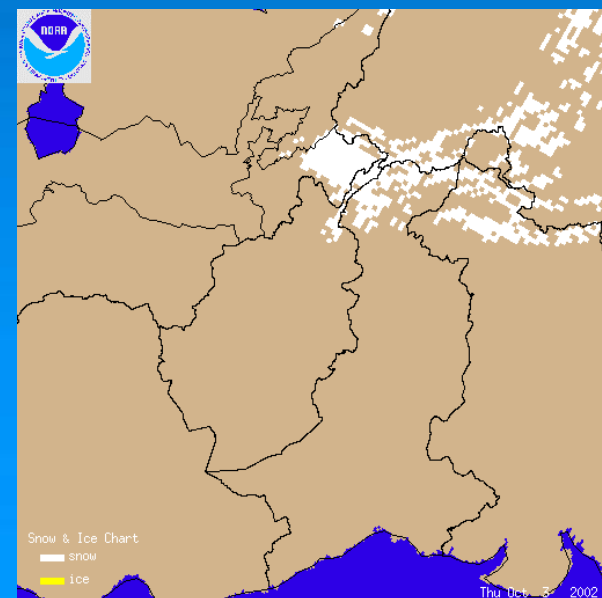
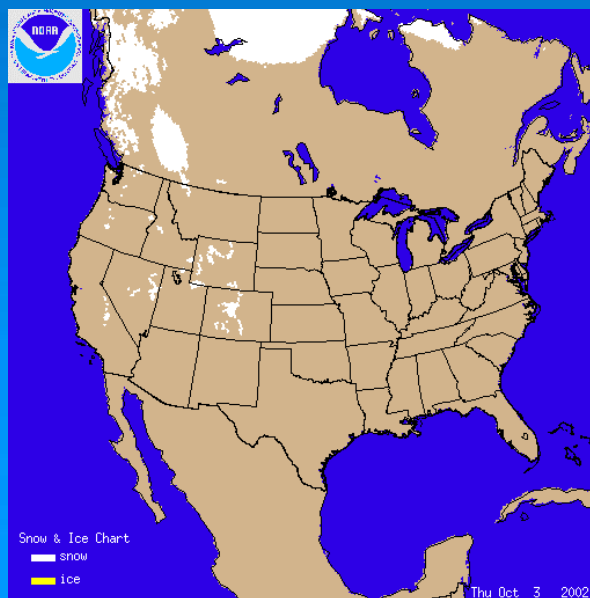
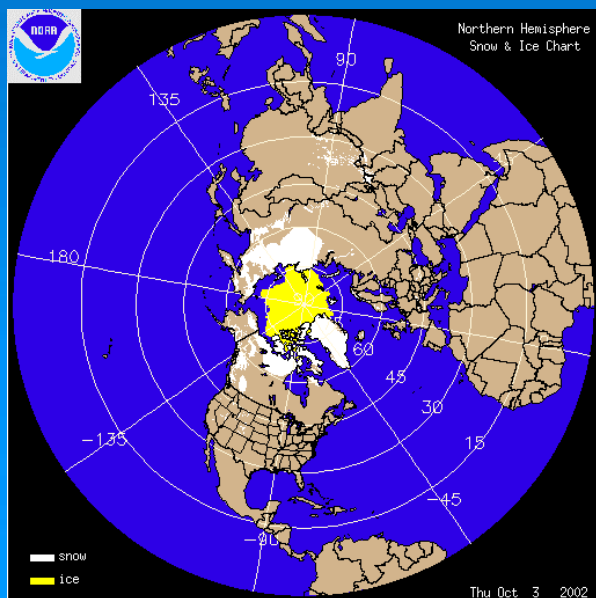
- Program was initiated in 1998 in response to the devastating Florida fires and the thick smoke over Houston, TX from Mexican fires.
- SSD produces a fire/smoke analysis 2x/day using GOES and POES (AVHRR and MODIS) analyzed imagery and automated points (FIMMA, ABBA)



SSD Products and Services

Daily N.H. Snow and Ice Analysis

Satellite Analysis Branch meteorologists produce a daily snow and ice cover map using various satellite data as input, especially fast looping GOES and POES Visible imagery. Analysis is input into operational models.

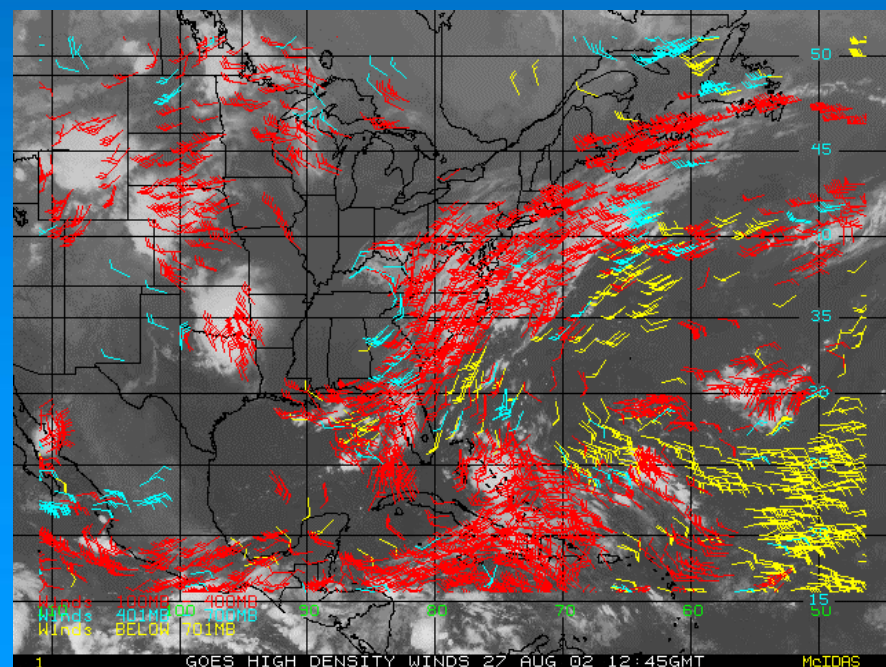
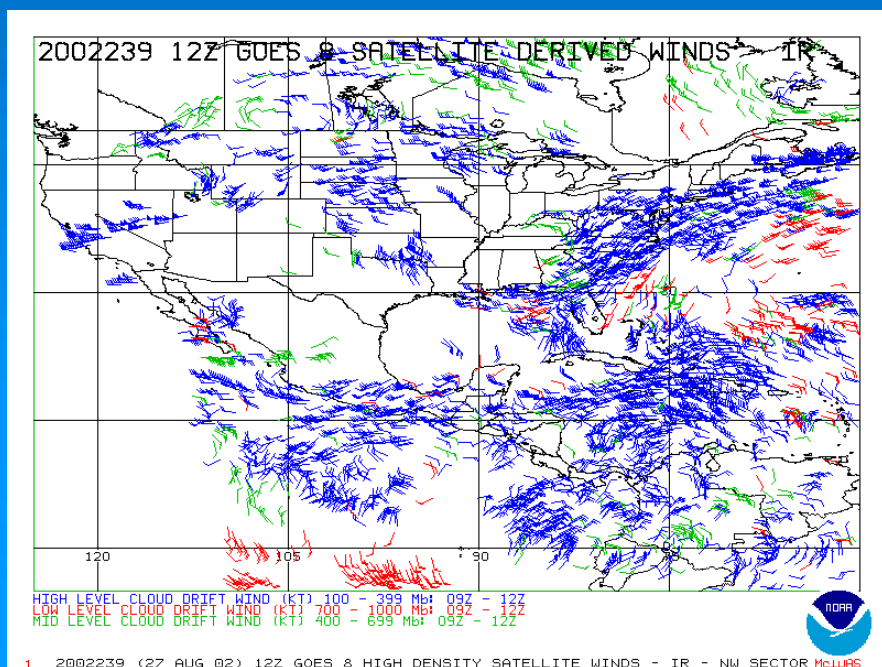




SSD Products and Services

GOES and POES Derived Winds

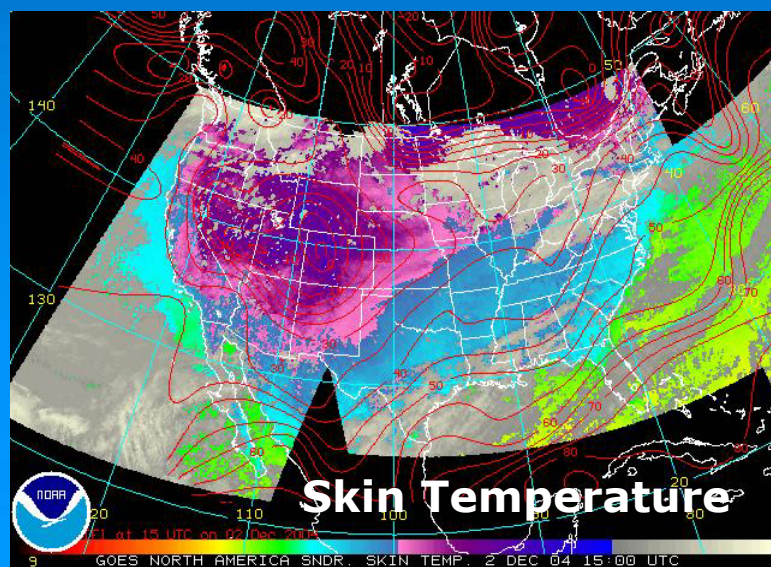
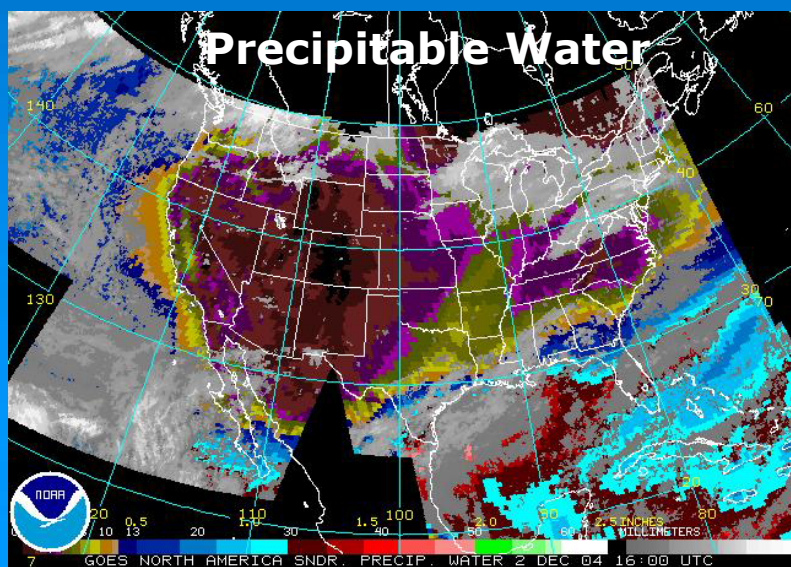
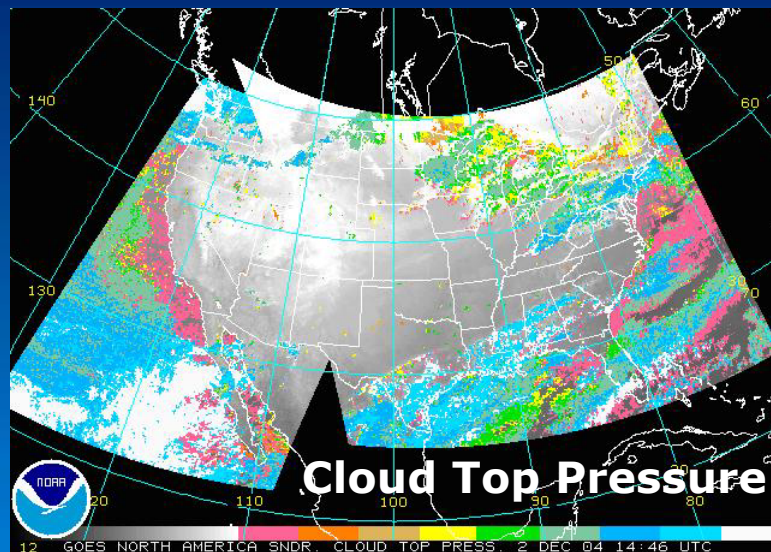
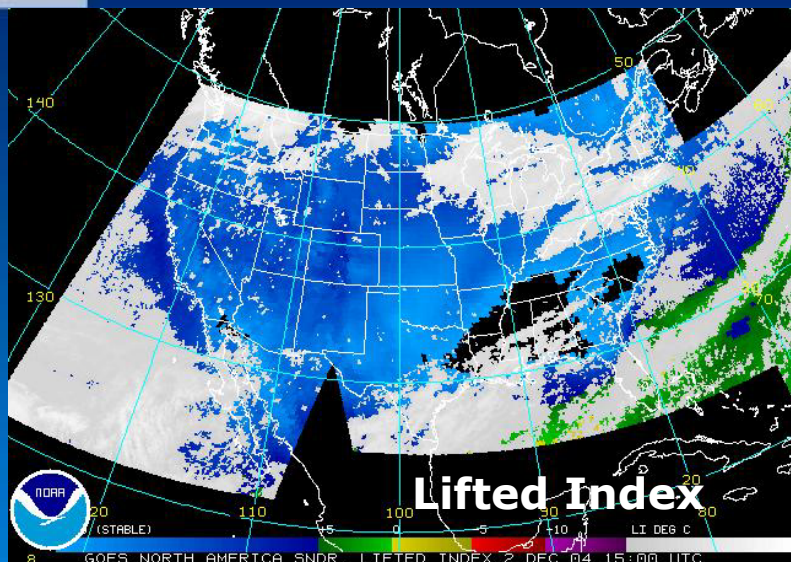
SSD continues to produce high density winds data using McIDAS for input into operational numerical weather prediction models.





GOES Sounder Derived Products

<http://www.ssd.noaa.gov/PS/PCPN/pcpn-na.html>






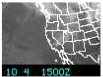
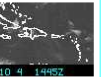
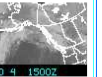

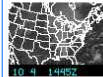






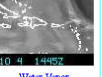


SSD Service to the Public

Public access to real time satellite data through the SSD Web Page

- Access to real time imagery from GOES and POES data ingested at SATEPS.
- Images remapped and displayed in McIDAS are saved as JPEGs and sent to web server every 1/2 hour

NOAA Satellite and Information Services
National Environmental Satellite, Data, and Information Service

Geostationary Satellite Server

East CONUS	West CONUS	Puerto Rico	Alaska	Hawaii
 Infrared	 Infrared	 Infrared	 Infrared	 Infrared
 Visible	 Visible	 Visible	 Visible	 Visible
 Water Vapor	 Water Vapor	 Water Vapor	 Water Vapor	 Water Vapor

[Comments?](#) We welcome them!

This server and data are not considered "operational". We do not guarantee availability or timely delivery of data and the server should not be used to support operational observation, forecasting, emergency, or disaster mitigation operations, either public or private. We also do not provide weather forecasts at this site, that is the mission of the [National Weather Service](#), please contact them for forecast information.

Information and how to use this server

The options on the left will take you to a specific set of sectors. Each browsable image from this web site is a 'clickable' link to the full 640x480 image.

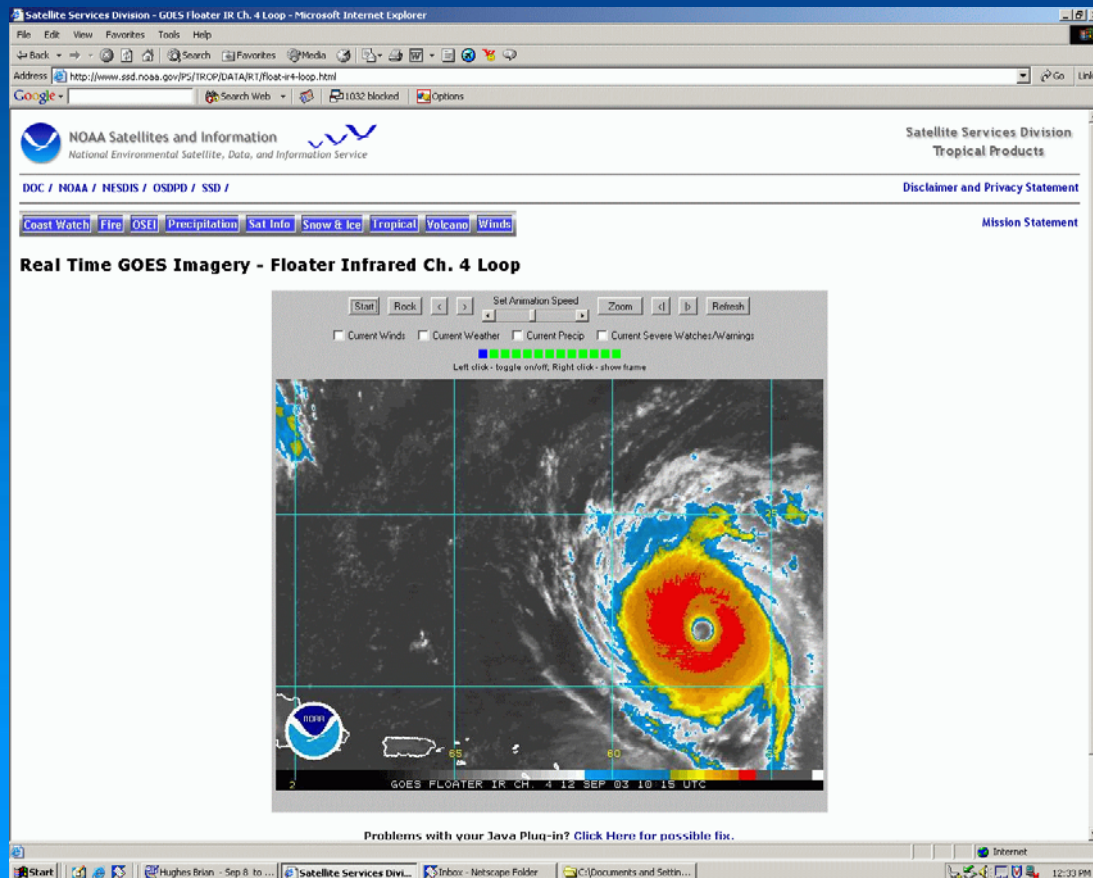
[Privacy Notice](#)
[Disclaimer](#)
[Tropical Atlantic/Pacific](#)
[Severe Storm Sectors](#)
[GOES 8/10 Full Disk](#)
[Color Enhanced Imagery](#)
[High Density Winds](#)
[METEOSAT Images](#)
[GMS Satellite Images](#)
[Indian Ocean Images](#)
[Daily Significant Event Imagery](#)
[CoastWatch](#)
[GOES 8 Archive](#)
[GOES 10 Archive](#)
[GOES Products](#)
[GOES Sea Surface Temperature Animations](#)

<http://www.goes.noaa.gov/>



SSD Service to the Public

Public access to real time satellite data through the SSD Web Page



- Real time GOES Data updated every 30 minutes
- Static images and loops allow users to follow specific events
- Client based Java Applets with overlays of meteorological data

<http://www.ssd.noaa.gov/>



SSD Service to the Public

Hazard Mitigation: Providing valuable information to the customer

Volcano Monitoring

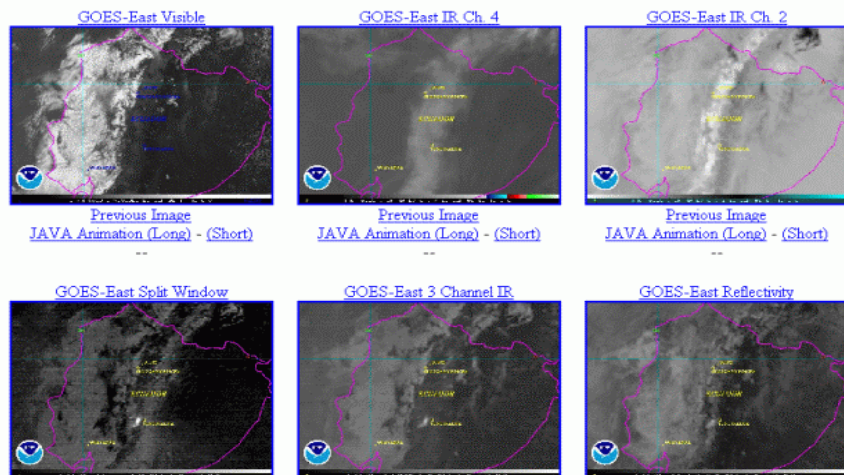
Guagua Pichincha and Tungurahua Satellite Imagery

[\(Text Version for slow connections\)](#)

Click on Image to enlarge

Hit "Reload" to view the latest data - Images are updated at approx. :08 and :38 after each hour.

News Flash: We have adjusted our scanning so that Tungurahua and Guagua will be visible during Rapid Scan Ops (RSO). (See RSO info).



Real Time Satellite Fire Monitoring

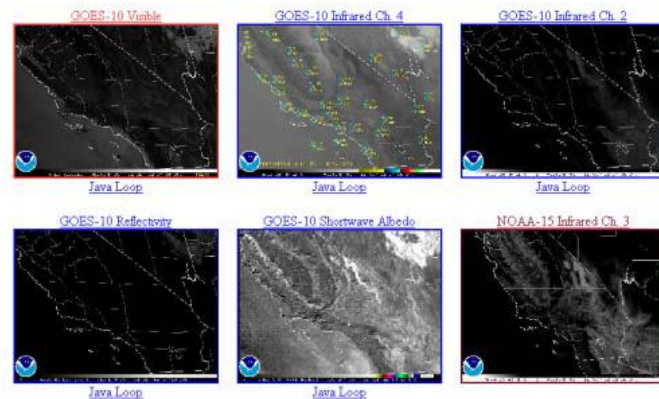
Click on Image to enlarge

Hit "Reload" to view the latest data - Images are updated every 30 minutes.

These images are considered "raw" data, with no analysis of fires and/or smoke. To view the official analyses by NOAA meteorologists, please see the [SSD Fire Analysis Page](#).

Probable fires will appear as sharp white "spots" in the Reflectivity and NOAA-15 images. NOTE: NOAA-15 navigation may be in error.

See a brief explanation of the [Infrared Reflectivity Product](#).



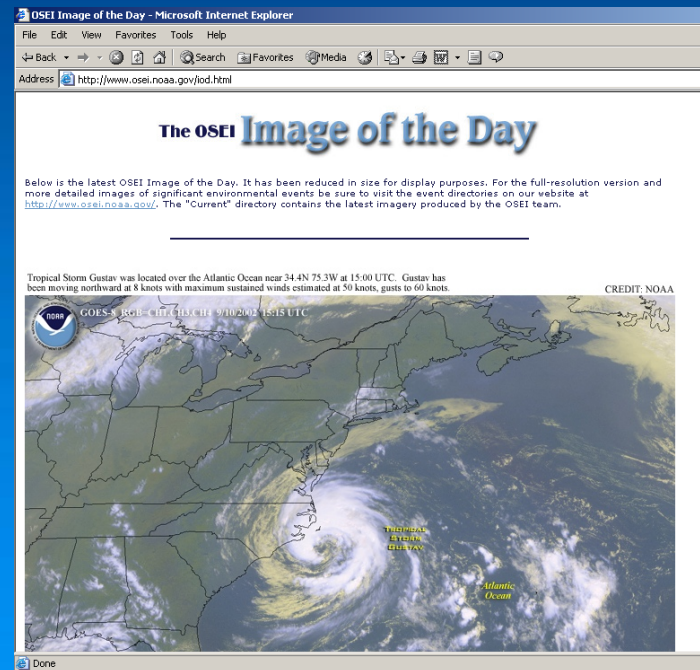
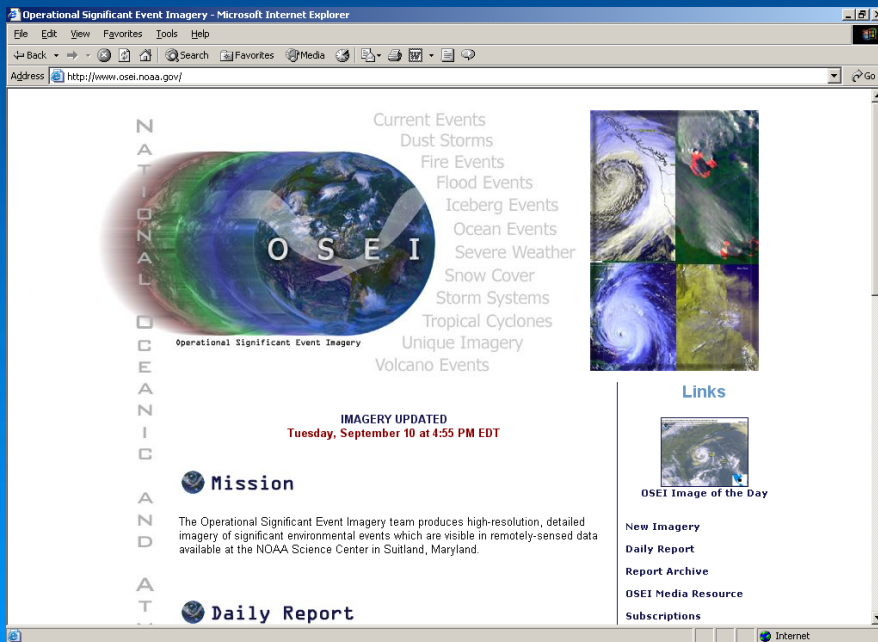
Fire and Smoke imagery

<http://www.ssd.noaa.gov/>



SSD Service to the Public

High Resolution Imagery for Media



Operational Significant Events Imagery (OSEI)

<http://www.osei.noaa.gov/>



Satellite Active Archive (NESDIS Office of Systems Development)

<http://www.saa.noaa.gov/nsaa/products/welcome>

NOAA's Comprehensive Large Array-data Stewardship System - Netscape

File Edit View Go Communicator Help

Location: a.noaa.gov/nsaa/products/search?sub_id=0&datatype_family=GVAR&submit.x=27&submit.y=7

Instant Message WebMail Calendar Radio People Yellow Pages Download Customize...

NOAA Satellites and Information
National Environmental Satellite, Data, and Information Service

Help | Login | Register
Comprehensive Large Array-data Stewardship System

CLASS Links

GOES Variable Data Format Go

Search - GVAR

Product Information

Product Name: GOES Variable Data Format (GVAR)
Measurement Category:

Data Description

GVAR is the data transmission format used to broadcast environmental data measured by the independent GOES Imager and Sounder instruments. For access purposes, the Sounder data has been extracted out of the GVAR data stream and stored in McIDAS Area format. The Block 11 data files contain ancillary instrument and metadata that may be useful to expert user.

Details

Satellites	Temporal Span	Coverage	Sensors	Visible Imager Resolution	Infrared Imager Resolution	Sounder Resolution
GOES08, GOES09, GOES10, GOES12	December, 2003 - Current	Full-disk, sector, or small area scans	Imager, Sounder	1 km at nadir	mostly 4 km at nadir	10 km at nadir

Coverage

☒ Continental United States
☒ Full Disk
☒ Northern Hemisphere
☒ Southern Hemisphere
☒ Other

Satellite Schedule

☒ Routine
☒ Rapid Scan Operation
☒ Super Rapid Scan Operation
☒ Other

Format

Imager and Block 11-GVAR Sounder, McIDAS

GOES Operations [GOES Operations](#)

GVAR Transmission Format [GVAR Transmission Format](#)

GOES Instrument Status [GOES Instrument Status](#)

Browse Imagery

Browse images shown correspond to the nearest Full-Disk scan for the satellite

Related Web Site [McIDAS Users' Group](#)

Appllet map running

NOAA's Comprehensive Large Array-data Stewardship System - Netscape

File Edit View Go Communicator Help

Location: a.noaa.gov/nsaa/products/search?sub_id=0&datatype_family=GVAR&submit.x=27&submit.y=7

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Datatype

☐ GOES Variable Block 11 Data
☒ GOES Variable Imager Data
☐ GOES Variable Sounder Data

Satellites

GOES-08
GOES-09
GOES-10
GOES-12

Temporal

Start Date (format: YYYY-MM-DD)
2004-11-21

End Date (format: YYYY-MM-DD)
2004-11-21

Start Time (format: HH:MM:SS)
00:00:00

End Time (format: HH:MM:SS)
23:59:59

Specify the range of the times for: ☐ Each Day Or ☒ The Entire Range Of Days

Spatial

World map showing satellite coverage.

Zoom In Zoom Out Max Area

Select Geometry: XY Plane

Reset Search Save Criteria Load Criteria

Help Home Order Query Shopping Cart Upload Search User Preferences User Profile